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Egocentric Interpretations of Fairness and Interpersonal Conflict

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Two experiments tested the hypothesis that egocentric interpretations of fairness are an important cause of unnecessary and costly settlement delays in bargaining. Subjects engaged in an interactive, dynamic bargaining task in which their objective was to reach an agreement with an opponent. If negotiators failed to settle, a strike ensued which was costly for both parties. The results of Experiment 1 indicated that negotiators' judgments of fair outcomes were biased in an egocentric direction. Further, the magnitude of the parties' biases strongly predicted the length of strikes. Experiment 2 examined the role of situational complexity as a cause of egocentric interpretations of fairness. Two forms of complexity were examined: complexity created by background information concerning the dispute and complexity associated with asymmetries in negotiators' strike costs. Background information concerning the dispute and asymmetric costs exacerbated egocentric interpretations of fairness. Egocentric interpretations of fairness were greatest when measured before negotiation and were mitigated following bargaining. Negotiators showed biased recall of information concerning the dispute, remembering more information that favored their own position. The magnitude of bias was positively related to egocentric interpretations of fairness. We conclude that egocentric interpretations of fairness hinder conflict resolution because people are reluctant to agree to what they perceive to be an inequitable settlement. © 1992 Academic Press, Inc.

A major enigma for negotiation researchers is why people often fail to reach agreements in situations where settlement is mutually advantageous. The failure to settle is particularly perplexing and unfortunate in disputes in which both parties suffer substantial losses if they do not reach

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agreement. For example, in labor disputes, impasses can result in costly strikes; in civil suits parties who fail to settle face legal expenses and court costs; territorial disputes that are not peaceably resolved may degenerate into armed conflict. Impasses are surprising in these situations because there is a potentially large "zone of agreement" and generally ample opportunities exist for communication between parties. So what explains the occurrence of unnecessary impasse?

Our thesis is that one important cause of unnecessary impasse is that people have different interpretations of conflict situations (Hammond, Stewart, Brehmer, & Steinmann, 1975). Because conflict situations are typically complex, ambiguity often arises concerning parties' contributions and entitlements. Ambiguity, in turn, permits multiple interpretations of "fair" or equitable settlements. We hypothesize that when faced with ambiguity, people's judgments will be biased in a manner that favors themselves. Such "egocentric interpretations" of fairness (Messick & Sentis, 1985) interfere with dispute resolution because people are averse to settling for what they consider to be an unfair agreement (Loewenstein, Thompson, & Bazerman, 1989). Negotiators' satisfaction with dispute outcomes is determined by social utility functions rather than by nonsocial, or individual, utility functions (Messick & Sentis, 1985; Loewenstein et al., 1989). Simply, individuals are often more concerned with the comparison of their own with the other party's outcome than with the absolute value of their own outcomes. As a result, negotiators may be willing to sabotage a settlement that would maximize their own interests if they feel that it is inequitable in terms of the comparison of their own with the other party's outcomes. If negotiators' perceptions of a fair settlement are biased and if they are unwilling to settle for less, they may fail to reach an otherwise mutually beneficial agreement.

Considerable evidence suggests that people make egocentric judgments in a variety of situations (Messick & Sentis, 1983; Bazerman & Neale, 1982; Neal & Bazerman, 1983), but the role of egocentric interpretations of fairness in negotiation has not been examined. A major purpose of this article is to explore the importance of egocentric assessments of fairness as a cause of inefficient conflict resolution. Our focus is on interpersonal conflict and dyadic negotiation, but our analysis has implications for alternate forms of conflict resolution, such as litigation and arbitration.

Researchers have produced a lengthy catalog of nonrational or ineffective behaviors that characterize negotiation behavior (see Bazerman & Neale, 1983; Thompson & Hastie, 1990a, for reviews). For example, negotiators engage in nonrational escalation of commitment to an ineffective course of action when faced with certain loss (Staw, 1981). People devalue concessions made by their opponents, whereas the same action

taken by one's own party is viewed positively (Oskamp, 1965). Reactive devaluation places people in a paradoxical situation in which failing to make concessions results in impasse, but concessions that are made are devalued by one's opponent (Stillinger, Epelbaum, Keltner, & Ross, 1990). The fixed-pie error (Bazerman & Neale, 1983; Thompson & Hastie, 1990b) occurs when negotiators assume that the other party's interests are opposed to their own in a direct, fixed-sum fashion, when in fact, parties' interests are not completely opposed. Fixed-pie perceptions are pervasive and prevent negotiators from identifying mutually beneficial agreements. An even more dramatic error occurs when negotiators fail to realize when they have interests that are completely compatible with those of the other party (Thompson & Hastie, 1990b). Negotiators are overconfident about the probability that an arbitrator will favor their position (Bazerman & Neale, 1982). Egocentric assessments of fairness may be another important cause of ineffective conflict resolution.

EGOCENTRIC INTERPRETATIONS OF FAIRNESS

Egocentric interpretations of fairness represent the confluence of two lines of social psychological research: one on equity and fairness, the other on egocentric attributions. The idea that people care about the outcomes of others has a long history in social psychology. According to equity theory (Adams, 1963, 1965; Homans, 1961; Walster, Walster, & Berscheid, 1978) people attempt to maintain proportionality between inputs and outcomes to themselves and comparison others. When inputs and outputs are multidimensional, or in different units, people need to make judgments about how inputs and outputs should be measured and compared with one another. Walster et al. (1978) noted in a passage presaging the concept of egocentric interpretations of fairness that when people are personally involved in a situation, judgments of fairness are likely to be biased in a manner that benefits themselves:

> Participants themselves, even after prolonged negotiation with one another, will not always agree completely as to the value and relevance of various inputs and outcomes. One person may feel that a distinguished family name is a relevant input, entitling him to positive outcomes. His partner might disagree. Aesop acidly observed that "The injuries we do and those we suffer are seldom weighted on the same scales." (1974:153)

The second line of research relevant to egocentric assessments of fairness is the study of egocentric biases in attribution. Ross and Sicoly (1979) found that people tend to overestimate their own input into a group project. For example, married couples' estimates of their contribution to household tasks generally sum to more than 100%. Seminar participants

tend to overestimate their own participation relative to others' estimates of their participation (Ross & Sicoly, 1979). It is a small leap from the view that people expect proportionality between inputs and the outcomes they receive and the observation that people overestimate their inputs, to the deduction that assessments of fairness—judgments of the outcomes that parties should receive—will be biased in favor of the self.

Messick and Sentis (1979) were the first to explicitly study "egocentric bias" in judgments of fairness. In the original study demonstrating the effect, Messick and Sentis (1979) asked subjects to specify a fair rate of pay in a situation in which either they had worked 10 hours at a task and another person had worked 7, or they had worked 7 hours and the other person 10. When they had worked 10 hours and the other person had been paid $25 for working 7, they thought that they should earn a mean value of $35.24. When they had been paid $25 for working 7 hours, they thought the other should be paid $30.29 for their 10 hours of work. The difference between the $10.24 ($35.24 − $25) and the $5.29 ($30.29 − $25) was interpreted as reflecting egocentric judgments of fairness.

Messick and Sentis's findings were based on a questionnaire which asked subjects to consider hypothetical situations. In a more realistic study, Van Avermaet (1974)[1] instructed subjects to divide real monetary rewards with another subject. Subjects worked at completing a questionnaire for either 45 or 90 minutes and were told that another subject had worked on the same task for either 45 or 90 minutes. The length of the questionnaire was also manipulated so that subjects completed 3 or 6 sections and were led to believe that the other person had completed 3 or 6 sections. At the end of the study the subject was given $7.00 in change and an envelope addressed to the other person and was asked to take what he or she considered to be his or her "share" of the $7.00 and to send the remainder to the other subject. When one input dimension (time, number of questions) favored the subject and the other favored the other party, subjects kept $3.78 and $4.18, respectively (average = $3.98)—a $.48 divergence from the equal split value of $3.50. When both inputs favored the self, subjects kept $4.68—$1.18 more than the equal split. But, when both inputs favored the other party, subjects kept $3.33, only $.17 less than the equal split. Again, the asymmetry between the amount allocated in each condition was interpreted as reflecting egocentric bias. However, inferences about judgments of fairness are complicated because the subjects were not explicitly instructed to take a "fair" share. It is possible that subjects' decisions concerning how much reward money to keep were influenced by other considerations.

[1] This study was reported by Messick & Sentis (1983), p. 76.

PSYCHOLOGICAL MECHANISMS UNDERLYING EGOCENTRIC INTERPRETATIONS OF FAIRNESS

There are a number of potential causes of egocentric interpretations of fairness, but as yet no research has systematically attempted to isolate explanations for the phenomenon. One possible explanation for egocentric interpretations of fairness is that subjects encode information in a biased manner. It is well known that prior beliefs and knowledge influence the way that information is processed and encoded (Hastorf & Cantril, 1954; Cohen, 1981; Ross & Lepper, 1980). Individuals involved in a dispute may distort the facts of the case or the significance of those facts in a manner that favors their own position. An illustration of such biased encoding is provided by Hastorf and Cantril (1954) in their classic article about differences in perception between Princeton and Dartmouth students who viewed a particularly rancorous football game between their teams. Students from the two institutions viewed a film of the game and rated infractions by both sides. Princeton students who viewed the film perceived the Dartmouth team as making more than twice as many infractions as their own team. When they judged these infractions as "flagrant" or "mild," the ratio was about two flagrant to one mild on the Dartmouth team and about one flagrant to three mild on the Princeton team. Dartmouth students recorded an approximately equal number of infractions by both teams and less than half as many infractions by the Dartmouth team as Princeton students recorded. As the authors noted, it appeared that Dartmouth students were "seeing" an entirely different game than their Princeton counterparts.

A second possible cause of egocentric interpretations of fairness is selective recall. When people evaluate the pros and cons of each side to arrive at a judgment of fairness, they may selectively recall arguments and facts favoring their own position. This could be due to differential attention and rehearsal of arguments during information acquisition or to selective retrieval at the time of recall (Ross & Sicoly, 1979). Negotiators often expend considerable effort generating arguments to bolster their positions (Pruitt & Rubin, 1986). Failure to take the other party's perspective (Bazerman & Carroll, 1987) may be traced to the same psychological processes that produce egocentric interpretations of fair outcomes.

A third explanation for the egocentric interpretation effect is differential weighting of information. Simply, people may view the information that favors their own position as more important than the information that favors the position of their opponent. For example, if two people engaged in a task produce an equivalent level of output, but one person works

much longer or harder to achieve that output, they are likely to have different ideas about the relative importance of effort versus ability, and about the relative importance of inputs into a task as opposed to performance as a criterion for remuneration. Messick and Sentis (1979, 1983) and Cook and Yamagishi (1983) suggest that people who put less effort into a task tend to view equality as the appropriate criterion for remuneration, whereas those who put more effort into the task are more likely to view reward proportional to contribution as an appropriate allocation rule.

Differential weighting of information may explain the emergence of multiple focal points in negotiation. A *focal point* is a prominent or conspicuous solution to a conflict problem (Schelling, 1960). For example, an even split of a fixed sum is a focal point. Often, people share similar views of fair outcomes and a single focal point emerges. Messick and Sentis (1985) found that subjects preferred to split rewards equally between themselves and another person when they were told that they had worked the same number of hours. Similarly, Loewenstein et al. (1989) found that disputants preferred mutual gains (or losses) to be shared equally between themselves and their opponent.

However, when negotiations are complex, multiple focal points may emerge. To the extent that there are multiple focal points, negotiators may adopt different views about which settlement point is fair, particularly ones that serve their own interests. Thus, focal points may hinder, rather than facilitate, conflict resolution. For example, Roth and Murnighan (1982) gave two negotiators the task of agreeing upon how to divide 100 lottery tickets among themselves. The lottery tickets determined the probability that each person could win a prize of $20. The obvious focal point was a 50–50 division of lottery tickets. Roth and Murnighan also included a (full-information) condition in which one party's lottery prize was $20; the other party's lottery prize was $5. In this condition, two focal points emerged: one was a 50–50 split of the tickets; the other was an equal-expected value focal point (i.e., the $20 player was awarded 20 tickets; the $5 player was awarded 80 tickets, thus equating players' expected values). In this condition, the $20 player advocated the 50–50 split; the $5 player advocated the 80–20 split. When more than one focal point existed, each player focused on the focal point that was most advantageous to him/herself. Most important, the frequency of disagreement when the $5 player knew both prizes was higher than when the $5 player did not know both prizes. When the $5 player knew both prizes, he/she argued for an "equal expected value" division of tickets. Bargainers focused on the features of the situation that supported their own position; discrepancies between negotiators' perceptions of fair outcomes hindered the likelihood of agreement.

THE ROLE OF COMPLEXITY

Complexities surrounding the negotiation may stimulate the development of egocentric assessments of fairness. Our thesis is that information augments, rather than ameliorates, the egocentric bias effect. Because conflict situations are often complex, ambiguity may arise concerning parties' contributions and entitlements. There are many sources of complexity that give rise to situational ambiguity, including differences in contributions, asymmetries in bargaining costs, differences in supporting arguments, differences in negotiators' valuations of the issues involved in conflict, etc. We hypothesize that when faced with ambiguity, people's judgments will be biased in a manner that favors themselves. A variety of research suggests that information can intensify biases in judgment and polarize people's perceptions. For example, initial perceptions persist and are even magnified when people encounter information that is ambiguous with regard to their perceptions or when they encounter a balanced mix of information, some that supports and some that refutes their beliefs (Ross & Lepper, 1980). Such egocentric interpretations of fairness (Messick & Sentis, 1985) interfere with dispute resolution because people are averse to settling for what they consider to be an unfair agreement (Loewenstein et al., 1989).

Cognitive mechanisms, such as biased encoding, selective recall, and differential weighting of information, require complexity to operate. For example, biased encoding requires some ambiguity in the encoded stimulus. The selective recall and biased weighting mechanisms both require multiple arguments so that parties can focus on different points favoring their positions. In short, complexity is an enabling condition for the development of egocentric assessments of fairness in negotiation. Our prediction is that such ambiguity allows individuals to make self-serving interpretations of the situation and to consequently deem as fair, distributions of resources that favor themselves. More complex conditions will lead to more self-serving interpretations of conflict, resulting in more intransigence, prolonged negotiations, and costly outcomes for both parties.

SUMMARY

Individuals interpret conflict situations in a self-serving manner. When faced with an opponent who exhibits the same bias, both parties perceive that the other is acting unfairly and both engage in a struggle to achieve their own notion of a fair solution. We conducted two experiments to examine the impact of egocentric assessments of fairness on negotiation. In Experiment 1, we examined the relationship between people's perceptions of fair outcomes in a dispute and their ability to resolve the dispute.

In Experiment 2, we examined cognitive mechanisms that may account for different perceptions of fairness.

EXPERIMENT 1

Method

The first experiment examined whether egocentric assessments of fairness occur in a negotiating context and whether they influence the likelihood of settlement. Subjects were 42 master of business administration students enrolled in a course on negotiations. Subjects were divided into 21 pairs, and each pair negotiated a dispute between a union and management over wage rates.[2] Both sides received identical information about the case in the form of a five-page case description. The information included a description of the company, a small steel fabrication firm, and details about the recent history of negotiations between the parties. To negotiate, each side wrote a wage offer on a piece of paper, and the two sides exchanged offers simultaneously. No verbal communication was permitted. If the two sides were unable to agree upon a wage, the union went on strike until they reached a settlement. Strikes were costly for both parties. Each time an offer was exchanged counted as a "day." If the offers overlapped (the union's offer was less than management's offer) then a settlement was reached and the wage was set at the midpoint between the two offers. The parties had 2 days to reach an agreement without suffering losses. If they failed to reach an agreement in 2 days, a "strike" began with imposed accelerating costs on both parties. The quantitative information conveyed in the case was as follows: (1) The union gained \$4,000,000 for each dollar increase over \$10; (2) The management lost \$5,000,000 for each dollar increase over \$10; (3) Union strike costs were equal to $\$50{,}000 \times D + \$5000 \times D^2$, where D is the number of strike days; (4) Management strike costs were equal to $\$100{,}000 \times D + \$15{,}000 \times D^2$; (5) If after 20 days of strike no agreement was reached, the wage was set at management's last offer.[3]

Before negotiating, both parties were asked what they considered to be a "fair wage from the vantage point of a neutral third party." They wrote the fair wage on a sheet (later collected by the experimenter) and were told not to show it to the other party. Students were told that their per-

[2] The exercise subjects completed, "Leckenby," is a Harvard Business School case. The case is particularly suitable for examining egocentric interpretations of fairness because it is complex (there are several facts, each favoring different parties). Subjects were highly motivated because their course grade depended on their performance relative to other people playing the same role (management or union).

[3] This procedure was adapted from the case. The bargaining situation contained many such asymmetries which presumably characterize many real world bargaining situations.

formance on the task would be evaluated on the basis of the dollar value of the agreement they reached and that their grade would not depend on their assessment of a fair settlement.

Results

The number of strike days ranged from 0 to 20 (M = 7.4 days, SD = 7.0 days). We examined the existence of egocentric assessments of fair outcomes in terms of negotiators' perceptions of a "fair wage." The mean fair wage judged by students playing the union role was \$10.61 (SD = .22); the mean for those in the management role was \$10.46 (SD = .16). These assessments of fairness are significantly different from one another, $F(1,17) = 7.1$, $p < .02$.

Our primary question was whether the two parties' assessments of fairness were related to the likelihood of settlement. To determine this, a regression was performed (across pairs) with the number of strike days as the dependent variable and the difference between the union's assessed fair wage and the management's assessed fair wage as the independent variable, $R^2 = .24$. The estimated equation was

$$\text{Strike days} = 5.4 + 13.6\ \text{DIFFAIR},$$

where DIFFAIR was the difference between the union's and management's assessed fair wages. Greater discrepancies between the two parties' judgments of fair settlements were associated with longer strikes, $t(16) = 2.3$, $p < .04$.

Discussion

The results indicate that egocentric assessments of fairness occur in disputes and that they are significantly related to the likelihood of settlement. The more that people disagreed in terms of their perception of a fair settlement wage, the longer it took them to reach a settlement. The fact that we elicited fairness ratings prior to negotiations further suggests that judgments of fairness influence the likelihood of settlement rather than vice versa. We did not explicitly explore the cognitive mechanisms underlying egocentric judgments. However, because the information in the case was expressed in completely unambiguous terms, biased encoding of information appears to be an unlikely explanation of the egocentric interpretation effect.

EXPERIMENT 2

The first experiment supports our prediction that egocentric assessments of fairness occur in dispute situations and that they are related to bargaining delays. In Experiment 1, we used a complex case in which

each party had several arguments that he or she could marshall to justify his or her position. We anticipated that the ambiguity arising from the complexity of the situation would provide negotiators with opportunities to make egocentric interpretations of the conflict situation. In Experiment 2, we manipulated complexity by varying the amount of background information the two parties received and the costs of delaying settlement (either symmetric or asymmetric for the two negotiators). Our prediction was that negotiators would be more likely to prolong settlement when they had more (rather than less) background information concerning the dispute because ambiguous background information provides an opportunity for negotiators to impose egocentric interpretations on information. We also predicted that more efficient settlements would occur when parties had symmetrical (as opposed to asymmetrical) strike costs because asymmetries in costs make simple split-the-difference focal points less obvious.

We also examined the psychological underpinnings of the egocentric interpretation effect. To examine whether egocentric interpretations of fairness stem from biased recall we surprised subjects by asking them to recall as many arguments as possible favoring each side after they completed the negotiation. To examine whether egocentric interpretations arise from differential weighting of information, we asked subjects to rate the importance of each fact recalled.

Method

Subjects and Procedures

A total of 180 participants completed the study.[4] Participants were told that the study involved negotiation and conflict resolution. Pairs of participants assumed the roles of representatives of a Teachers' Union and a Board of Education involved in a contract negotiation. The objective of the task was to reach an agreement concerning teachers' salaries. The negotiations proceeded with each party submitting a proposal to the other side. If parties' proposals overlapped, a joint settlement was reached. If their proposals did not overlap, a "day" was said to have passed. As in the previous case, a strike began if an agreement was not reached within 2 days. Negotiations could proceed for a maximum of 20 strike days after which point the parties settled at the midpoint of the two last offers.[5] Each

[4] One hundred eight undergraduates participated for extra course credit and 72 graduates participated in exchange for a fee of $10.00. There were no reliable differences between the two samples on the key measures of interest.

[5] We modified the default salary settlement in order to create a symmetrical bargaining condition (salary settlement was midpoint between the two parties' last offers) because one of the experimental manipulations involved the symmetry of negotiators' strike costs.

strike day that passed without reaching agreement was costly to both parties. Thus, it was in both parties' interests to reach an agreement quickly and avoid a strike.

Design

The experimental design was a 2 × 3 × 2 factorial. Two variables concerned the complexity of the bargaining situation: Context (background/no background information) and Symmetry (symmetric strike costs/asymmetric strike costs—lower for teachers/asymmetric strike costs—lower for board). Another variable, Questionnaire, manipulated the point at which subjects were asked to indicate their perceptions of fair outcomes (before/after negotiation).

Experimental Materials

Subjects were given payoff schedules indicating what each salary settlement was worth to them.[6] The full range of salary settlements ($24,000–$26,000 in increments of $100) were listed, and next to each salary settlement was the dollar value associated with each salary level. Below this, were listed the dollars that negotiators would lose each day the negotiation continued after a strike began. Negotiators were instructed that to determine the net value of a particular settlement, they should subtract the costs (if any) associated with the number of strike days passed from the payoff associated with the salary. They were told that their goal should be to maximize their gain (minimize their loss) in the negotiation. Both the teachers' and the board's salary benefits and strike costs were indicated on the materials given to subjects, so all negotiators had complete information about their own and the other party's benefits and costs. Negotiators were given a brief quiz to ensure that they understood how to interpret the payoff schedules for themselves and their opponents.

Subjects were also asked what they thought would be a "fair" salary settlement. Half of the negotiators provided an assessment of the fair salary and rated alternative resolutions before negotiating; the other half did this following the negotiation. This was done to explore the impact (if any) of fairness judgments on performance and to examine whether judgments of fairness change during negotiation. Following the negotiation, negotiators were asked to list as many facts as they could recall that supported their own position and that of the other party and to rate each fact in terms of its importance.

[6] A complete description of the payoffs and strike costs may be obtained from the authors.

Experimental Conditions

The experimental manipulations varied the information negotiators were given concerning the background of the dispute and the symmetry of their strike costs. Subjects in the "Background Information" condition received detailed information concerning the facts related to the dispute situation (see Appendix 1). Specifically, subjects were given a sheet titled "Background Information" which described events that had occurred in the previous year. Some of the events favored the position of the education board and highlighted action taken to improve the teachers' situation (e.g., allowing teachers more flexibility in scheduling their class time; providing tuition reimbursement). Other events were sympathetic to the teachers' situation and described hardships suffered by the teachers (e.g., student assistant funding cutbacks; increases in classroom size). Subjects in the "No-background Information" condition were not given any information concerning the background of the dispute. Extensive pretesting indicated that the background information was neutral—it did not favor either side.[7]

Strike costs were created in such a way that in one condition teachers and board members had similar costs; in two other conditions, parties' costs were different. In one asymmetric strike cost condition the teachers had higher strike costs by a factor of 50%; in the other, the board had higher strike costs by a factor of 50%. In the Symmetric strike cost condition, both parties had identical strike costs.

Results

Negotiation Outcomes

Only four pairs of negotiators avoided a strike (4.4%). More than half of the negotiators took over 9 days to reach an agreement (M = 9.9 days, SD = 5.23 days). Salary settlements ranged from \$24,500 to \$25,750 (M = \$25,006, SD = 258.99). The most common salary settlement was an even-split, \$25,000; 32% of the negotiation pairs settled for a \$25,000 salary; 54% settled for salaries within \$100 of this focal point. There were no differences in the mean salary settlement as a function of background information. This null result is consistent with results from the pretest, suggesting that background information did not favor either party. However, background information affected the distribution of salary settle-

[7] A different group of 28 subjects was given the background information to read and asked to indicate whether they thought the information favored the teachers or the board. Specifically, subjects placed a mark on a 7-point scale with endpoints labeled "favors teachers" and "favors board." Analyses indicated that subjects' responses did not significantly differ from the midpoint of the scale, $t(27)$ = 1.66, ns.

ments: Negotiators who had background information were less likely to settle on the focal point salary of $25,000 (22%) than were negotiators who did not have background information (43%), $F(1,66) = 4.86, p < .04$. The average absolute deviation from the focal point was greater for those with background information ($M = 210.61$) than for those without background information ($M = 138.36$), $F(1,78) = 4.27, p < .05$.

Perceptions of Fair Outcomes

Negotiators were asked to indicate what they perceived to be a "fair" salary settlement. Half of the negotiation pairs made this judgment prior to negotiation; the other half made this judgment following negotiation. Table 1 presents the teachers' and the board's perceptions of fair salary settlements measured before and following negotiation.

As can be seen in Table 1, the fair wage assessed by the teachers decreased following negotiations; the fair wage elicited from the board rose. Neither change was significant by itself, but the difference between the two parties' fair wage assessments was significantly different when measured at both times: Before negotiation, $F(1,31) = 40.0, p < .0001$, and following negotiation, $F(1,34) = 15.74, p < .0005$. Further, the degree of egocentric interpretations of fairness (as measured by the difference in parties' judgments) was significantly greater before negotiation ($M =$ $354.65 difference) than following negotiation ($M =$ $170 difference), $F(1,87) = 6.02, p < .02$.

Background information. The next question was whether the background information and the symmetry of strike costs affected negotiators' perceptions of fairness. The presence of background information affected perceptions of fair salary settlements, $F(2,64) = 3.29, p < .05$. Teachers who had background information thought that a higher salary was fair ($M =$ $25,272.83, $SD = 342.33$) compared to teachers who did not have background information ($M =$ $25,122.09, $SD = 232.89$), $F(1,65) = 6.31$,

TABLE 1
PERCEPTIONS OF FAIR SALARY SETTLEMENTS

	Perceptions measured before negotiation	Perceptions measured after negotiation	Marginal means
Teacher	$25,249.53	$25,153.70	$25,200.00
	(323.28)	(277.40)	(302.60)
Board	$24,894.88	$24,983.70	$24,940.00
	(269.99)	(265.96)	(270.10)
Difference	$354.65	$170.00	$259.20
	(379.27)	(330.41)	(364.80)

Note. Standard deviations are in parentheses.

$p < .02$. However, background information did not affect the board's perception of a fair salary settlement, $F = 1.39$, $p < .25$.

The presence of background information also affected the variance in parties' perceptions of fairness: Teachers who had background information showed greater variability in their judgments of a fair salary settlement ($SD = 342.33$) compared to those without background information ($SD = 232.89$), $F(45,42) = 2.16$, $p < .05$. However, the effect for board members was not significant, $F = 1.15$.

Asymmetric costs. The symmetry of strike costs also significantly affected negotiators' perceptions of fair salary settlements, $F(2,84) = 4.05$, $p < .03$. The greatest difference between negotiators' perceptions of fair salary settlements occurred when Board members' costs were higher (M = \$403.79 difference), followed by when negotiators' costs were the same (M = \$216.90 difference) and when teachers' costs were higher (M = \$163.55 difference). Thus, as expected, symmetry had an impact on assessments of fairness; however, contrary to predictions the difference between the two parties' perceived fair settlement points was not smallest in the symmetrical condition.

Length of Strikes

The presence of background information and symmetry of strike costs did not directly affect the likelihood or length of strikes, Fs < 1. The next question was whether, as in Experiment 1, negotiators' perceptions of fair salary settlements significantly predicted the length of time it took to reach agreement. The earlier finding was replicated: The greater the difference between negotiators' perceptions of a fair salary, the longer negotiators took to resolve the conflict, $r(89) = .30$, $p < .005$ ($R^2 = .09$). The estimated equation was

$$\text{STRIKE DAYS} = 8.3 + 4.3\ \text{DIFFAIR},$$

such that as in Experiment 1, greater discrepancies between negotiators' judgments of fair salary settlements were associated with longer strikes, $t(87) = 2.9$, $p < .0001$. Separate analyses indicated that the correlation between discrepancies in fairness judgments and strike duration was stronger when perceptions of fair settlements were measured before negotiation ($r(43) = .50$, $p < .001$) than following negotiation ($r(46) = .07$, ns).

Recall of Background Information

Following the negotiation, subjects in the background information condition were asked to recall as many facts as they could remember per-

TABLE 2
RECALL AND EVALUATION OF INFORMATION

	Teacher	Board
Number of facts recalled supporting teachers	4.15	3.46
	(1.45)	(1.72)
Number of facts recalled supporting board	3.59	4.20
	(1.51)	(1.90)
Evaluation of importance of information supporting teachers	3.83	3.96
	(0.80)	(0.88)
Evaluation of importance of information supporting board	3.84	3.85
	(0.80)	(0.65)

Note. Standard deviations are in parentheses.

taining to the negotiation situation. There were no significant differences in the *total* number of facts recalled by the teachers and the board, $F < 1$. However, as can be seen in Table 2, subjects showed egocentric recall, recalling more facts that supported their own position ($M = 4.18$, $SD = .17$) than facts that supported the other party's position ($M = 3.52$, $SD = .17$), $F(1,34) = 10.29$, $p < .003$. The difference was significant for both the teachers and the board.

The finding of differential recall is suggestive, but not sufficient to show a link between recall and egocentric interpretations of fairness. To test more directly for such a link, we examined whether egocentric interpretations of fairness were related to differential recall of information. We performed separate regression analyses for the teachers' union and board with perceptions of fair salary settlements as the dependent variable and the difference between the number of arguments recalled in support of own position (board or teachers) and the number of arguments recalled in support of the other side as the predictor variable. The regression equations were

$$\text{Board's perception of fair salary} = \$24{,}993 - 37.5\ \text{DIFRECALL}$$
$$\text{Teachers' perception of fair salary} = \$25{,}303 - 44.0\ \text{DIFRECALL}.$$

Board members who engaged in egocentric recall (i.e., recalled more information that favored their own position compared to that of the teachers) were more likely to want to pay teachers lower salaries, $t(44) = 2.0$, $p < .05$. Similarly, teachers who recalled more information that favored their own position compared to the board wanted higher salaries, although the effect was only marginally significant, $t(44) = 1.6$, $p < .11$. Thus, the results suggest a link between differential recall and egocentric interpretations of fairness.

Evaluation of Information

In addition to recalling information, subjects were also asked to evaluate the importance of the information they recalled. We performed analyses to determine whether subjects evaluated information that favored their own position as more important than information that favored their opponent's position. We did not find any evidence to suggest that teachers or board members viewed the evidence supporting their own position as more important than the evidence supporting the other party's position, $F < 1$.

Discussion

Even when people are presented with identical information, their perceptions of the situation differ dramatically depending upon their role in the situation. Teachers' perceptions of "fair" salary settlements were significantly different than those of the board. The hypothesized role of complexity as a determinant of egocentric interpretations of fairness was supported, though the results are not entirely consistent with our predictions. The presence of background information exacerbated egocentric perceptions of fairness. Negotiators who were given additional ambiguous information about the situation were more likely to believe that they deserved higher salaries, although the effect was significant only for teachers. The symmetry of negotiators' strike costs also affected their assessments of fairness, although egocentric interpretations of fairness were not as clearly mitigated in the symmetrical conditions as we had predicted.

Perhaps the most important finding is the egocentric perceptions of fairness led to longer strikes, resulting in costly outcomes for both parties. We explored several possible cognitive mechanisms that may explain why egocentric assessments occur. We found that negotiators recalled more information about the situation that supported their own position compared to that of the other party. Moreover, egocentric recall was related to perceptions of fair salary settlements. This suggests that negotiators who are presented with information about a conflict situation may engage in selective processing of information and facts, recalling more facts and arguments that support their own position than facts that support the other party's position. In contrast, we did not find any evidence to suggest that negotiators engage in biased evaluation or weighting of information or the facts recalled.

GENERAL DISCUSSION

The purpose of our research was to address an enigma raised by two empirical facts: First, people prefer to reach fair or equitable outcomes (Adams, 1963, 1965; Homans, 1961; Walster et al., 1978). Second, people

often fail to reach mutually beneficial agreements in negotiation (Raiffa, 1982). Our thesis was that people have different perceptions of fairness, and their perceptions are biased in ways that favor their own position. Because negotiators are reluctant to agree to what they perceive to be an unfair or inequitable settlement, egocentric interpretations of fairness lead to intransigence and hinder conflict resolution (Loewenstein et al., 1989).

Our analysis of negotiators' recall of information and evaluation of the relative importance of information provides some clues about the cognitive processes underlying egocentric interpretations of fairness. We suggested that egocentric biases in negotiation may stem from biased encoding of information, selective recall, or differential weighting of information. Even though negotiators were presented with identical, unbiased information about a dispute, they recalled more information that favored their own position. However, when asked to evaluate the importance of the information recalled, there were no differences in terms of the importance associated with information favoring their own position and that of the other party. Thus, our results appear to be most consistent with the selective recall explanation. However, our results are not conclusive. Specifically, although negotiators did not consider the evidence favoring their own position to be more important than the evidence favoring the other party's position, it is nevertheless plausible that a weighting operation was still performed during encoding. Negotiators may have discounted the evidence supporting the other party's position during the encoding stage. During recall, retrieval operations may have led negotiators to search for information that exceeded a certain threshold of importance.

Understanding the cognitive operations that produce egocentric judgments is important. If egocentric judgments stem from biased recall, then showing negotiators information should enhance their memory for facts that favor the other party and perhaps mitigate egocentric judgments. If egocentric judgments stem from differential weighting of information, then presenting negotiators with information should not affect judgments and may even intensify egocentric assessments of fairness. We do not mean to imply that our list of cognitive processes is exhaustive or exclusive. Undoubtedly, the egocentric bias effect in negotiation is complex and possibly multidetermined. Finally, we do not rule out motivational explanations for the egocentric effect. As Tetlock and Levi (1982) suggest, it is generally difficult to separate purely motivational explanations from strictly cognitive ones.[8]

[8] Ross & Sicoly (1979) distinguish among motivational and cognitive explanations for egocentric biases and offer support for a cognitive interpretation, noting that people tend to take more responsibility for positive as well as negative events, such as marital arguments, making a motivational interpretation less plausible.

The fact that increasing information exacerbated egocentric interpretations of fairness and that egocentric assessments led to longer and more costly bargaining delays suggests that supplying negotiators with more information can throw fuel on the fires of dispute. This is a particularly disturbing implication of our results. How, then, may people avoid unnecessary bargaining delays and resolve conflicts more effectively? It seems impractical to suggest that people should not obtain information. Perhaps it would be beneficial to prompt negotiators to consider the multifaceted nature of fairness by instructing them to try to argue why settlements that appear to favor the other side might be fair. Perhaps negotiators could inform one another of what they consider to be a fair settlement and why.

Egocentric interpretations of fairness may have an indirect impact on settlements in arbitrated disputes by contributing to negotiator overconfidence. Overconfidence is often adduced as a cause of nonsettlement in arbitrated disputes such as legal cases[9] and labor disputes.[10] Because arbitrators' decisions are presumably guided by considerations of fairness, egocentric assessments of fairness will lead negotiators to be overconfident concerning the arbitrator's likelihood of accepting their final proposal.

Egocentric interpretations of fairness may also explain some anomalous findings in the experimental games literature. Numerous studies have examined sequential bargaining games in which two people are faced with the task of dividing a fixed amount of resources (for a review, see Ochs & Roth, 1989). The game proceeds with party A proposing a division that party B may accept (and the game ends) or reject (and the game continues). If the offer is rejected, the pie of resources shrinks by some fixed cost or fixed discount factor, and party B proposes a division that party A may accept or reject. The studies with particular relevance to egocen-

[9] Posner (1977) identifies "mutual optimism" as the primary obstacle to out of court settlement; Shavell (1982) has developed an "optimism model" of legal disputant behavior based on the notion that failure to settle results from excessive optimism on the part of litigants that the case would be settled in their favor if it were to go to trial, and several legal scholars have found empirical evidence of the role of optimism in nonsettlement (Priest & Klein, 1984; Silver, 1989). Raiffa (1982:75) reports that in an experiment dealing with a hypothetical legal case, subjects' estimates of the likelihood that a judge would rule in their favor depended strongly on the role they had assumed. In the particular case he examined, plaintiffs' median assessment that they would win the case was .75; the defendant's median assessment that the plaintiff would win the case was .55.

[10] Neale & Bazerman (1983) found evidence of overconfidence in a study of negotiator behavior under final offer arbitration. In final offer arbitration the arbitrator must select one of the two parties' offers; thus, the combined likelihood of one of the offers being accepted is 100%. In their study, however, the sum of the two subjects' estimated probability of acceptance was 136%!

tric bias are those in which each party has a different discount factor—i.e., their "pies" shrink at different rates. According to game theoretic analysis, this modification should increase the payoff to the party with the lower discount factor. However, when parties have unequal discount factors, agreement on trial 1 is less likely and both parties suffer (Rapoport, Weg, & Felsenthal, 1990; Weg, Rapoport, & Felsenthal, 1990). Why is this? Our analysis of egocentric bias in negotiation suggests that each party focuses on a different settlement as a fair solution. The party with the higher discount rate will view an equal split as a fair solution; the party with the low discount rate will see this as justification for a larger share of the pie (Spiegel, Currie, Sonnenschein, & Sen, 1990). The disparity between people's perceptions of fair settlements leads to intransigence and mutually destructive behavior.

One of the most disturbing conclusions of our research is that information impedes conflict resolution even when people are presented with identical facts. It is both paradoxical and unfortunate that unbiased information should polarize egocentric perceptions instead of causing them to converge (Issacharoff & Loewenstein, 1990). We can only speculate that the incidence and magnitude of egocentric interpretations in real world negotiations are even more dramatic than observed here. In real life conflicts, negotiators often are not presented with unbiased, mutually shared information. Typically, negotiators are more informed about their own position than that of the other party (Raiffa, 1982). And, even if negotiators do seek information about the other party, their methods of elicitation and search may be biased. However, we saw that egocentric judgments of fairness were greater when measured before negotiation than when measured following negotiation. An optimistic interpretation of this result is that the negotiation process has a mediating effect on egocentric bias. Another interpretation is less sanguine: perhaps simple balance principles (Heider, 1958) motivate negotiators to bring their perceptions in line with the reality of their outcomes. Thus, after several days of strike and a salary agreement that is less than expected, negotiators' judgments of fairness are tempered by the reality of their outcomes.

Breakdowns in interpersonal conflict resolution occur when two people simultaneously attempt to attain their own egocentrically biased position of fairness—a mutually incompatible goal. The paradox of such situations is that both parties honestly believe they are making good faith efforts to arrive at a fair solution. The road to mutual destruction is often paved with good faith bargaining.

APPENDIX 1

Note that the information in plain and boldface print was presented to subjects in the "background information" condition; in the "no back-

ground information" condition, subjects did not see the boldface information.

IMPORTANT BACKGROUND INFORMATION

(please read carefully)

It is now September 10, two days before the first day of the school year in Newtown. The contract between the Board of Education and the Teachers' Union expired on June 30, and the two parties have begun to bargain. You will represent the Teachers' Union (Board of Education) at the bargaining table, so you should familiarize yourself with the following pertinent facts.

In prior meetings you have met with representatives of the Board of Education (Teachers' Union) on several occasions in an attempt to finalize a contract. Several issues of the contract have been worked out, such as sick days, work load, and medical insurance, but a major issue remains: teachers' salaries. Prior to June 30 and during the summer months, there was increasing talk among the membership of the Teachers' Union of the desirability of calling a strike if the contract was not finalized by opening day.

The Newton school district pays teachers lower salaries compared to other school districts in the state. Salary increases in the past years have been minimal and as a consequence, teachers' salaries have not kept up with increases in standards of living.

The Board has provided teachers with attractive medical benefits, including 100% dental coverage and complete family care. Further, the Board instituted a policy which provides full tuition reimbursement for teachers who elect to take courses in neighboring universities. In addition, the Board of Education opened a high-quality day care center in one of the schools and offers free day care to teachers with pre-school age children.

Shifts in student populations during the past year or so have increased classroom size and have made classroom instruction for teachers much more difficult and challenging. Further, the district instituted a major curriculum change last Fall, which required teachers to spend more non-classroom hours reworking their lesson plans. In addition, funds to hire student teaching assistants to help with instruction and planning have been eliminated.

The Board has allowed the teachers more flexibility in scheduling own class time. With this option, teachers can spread out their free time over the course of a week or concentrate it in one day, so they can take one afternoon off a week. Further, the Board has agreed to provide teachers with more secretarial help. And last year, the Board provided funds for much needed building renovations, classroom and lounge remodeling, and parking facilities.

Newtown is a relatively settled and stable community, with a strong interest in quality education and a commitment to keeping its already burdensome tax rate down. The Teachers' Union is adamantly committed to improving the salaries of its membership and the Board is just as committed to keeping its costs as low as possible. However, both parties want to obtain an agreement that is acceptable to all parties.

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